

## ABSTRACT

An injectable drug delivery system for localized release of Phenstatin to a tumor site over a period of time is provided. The drug delivery system comprises the thermoresponsive polymer N-isopropylacrylamide (NIPAAm) and Phenstatin, a toxic  
5 antineoplastic agent. The drug delivery system has a critical solution temperature (LCST) that causes it to change from the liquid state at room temperature when injected to a gel or semi-solid state after reaching the temperature of the human body *in situ*.

Methods are given for delivering Phenstatin to a cancerous tumor. In these methods, the drug delivery system is injected into a tissue or into a tumor where it forms  
10 a gel. Phenstatin is slowly released from the polymer and exerts its cytotoxic, tubulin-related effects on the tumor. Tumors that may be treated by the present methods include, but are not limited to breast, prostate, lung and bowel cancerous tumors.